

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Appel LJ, Clark JM, Yeh H-C, et al. Comparative effectiveness of weight-loss interventions in clinical practice. *N Engl J Med* 2011;365:1959-68. DOI: 10.1056/NEJMoa1108660.

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Appendix I: Synopsis of Intervention

Weight Loss Goal and Behavioral Recommendations

<i>Weight Loss Goal</i>	Minimum 5% weight loss, individually tailored
<i>Total Calorie Recommendation</i>	1200 kcal/day if ≤ 170 lb 1500 kcal/day if > 170 lb and ≤ 220 lb 1800 Kcal/day if > 220 lb and ≤ 270 lb 2200 Kcal/day if > 270 lb
<i>Dietary Recommendation</i>	DASH dietary pattern: 7-12 services of fruits/vegetables 2-3 servings of low fat dairy reduced sodium $\leq 25\%$ of calories from fat
<i>Physical Activity goal</i>	Build to ≥ 180 minutes/week of moderate intensity physical activity in bouts ≥ 10 minutes in length
<i>Recommended Frequency of Tracking Food Intake and Physical Activity</i>	Daily
<i>Recommended Frequency of Self Weighing</i>	At least weekly during weight loss; daily during maintenance
<i>Website Log-In</i>	At least weekly
<i>Online Feedback Based on Self Monitoring</i>	After each weight log in
<i>Automated Email Feedback Based on Self Monitoring</i>	Monthly feedback, re-engagement reminders

*Adapted from Jerome G at el, Obesity and Weight Management, 2009

Potential Coaching Contacts

- CCD: 33 by phone (~ 20 minutes/contact)
 - Weekly during months 1-3 (total of 12)
 - Monthly during months 4-24 (total of 21)
- IPD: 30 group sessions (~90 minutes/contact), 10 individual sessions, 21 phone contacts
 - 9 group and 3 individual sessions during months 1-3 (total of 12)
 - 3 group, 2 individual, and 6 phone sessions during months 4-6 (total of 11)
 - 18 group, 2 individual, and 18 phone sessions during months 7-24 (total of 38)

Coaching

- Coaches presented as part of a team, with their physician, to promote weight loss
- Focus on key weight maintenance behaviors (reduced calorie intake in setting of DASH diet; increased exercise; regular log-in to web site; and use of food records).
- Use of motivational interviewing (e.g. asking open-ended questions, exploring ambivalence, supporting optimism for change, and directing the conversation toward desired behavioral goals).
- Re-engagement procedures when participants do not log-in, by automated email (after 7 and 10 days without log-in) and then by phone (after 14 days without login).
- Case-management support for coaches.

Web-based Resources

- Learning modules, with objectives, educational content, quizzes, and supporting worksheets.
- Self-monitoring tools and graphs (weight, minutes of exercise/day, calories consumed/day), with recommendation to record weight at least weekly on the website.
- Online feedback regarding weight loss progress (e.g. change in weight since last log in, weight trend).

Role of Primary Care Provider (PCP)

- Review one-page report of the patient's weight progress at routine office visits
- Encourage participation in the POWER interventions
- Report events that might affect ability to participate in the intervention
- Send letters to participants as part of re-engagement strategy after prolonged periods with no intervention contact
- Assist patients with diabetes on glucose self-monitoring and medication adjustment

Learning Modules

Introductory Phase (Months 1-3)

1. The Basics of Self Monitoring
2. Safe, Effective Exercise for Weight Management
3. Energy Balance -The Truth about Weight Loss
4. Nutrition for Health
5. Making Changes: Portion Sizes, Restaurant Tips
6. Creating the Exercise Habit
7. Common Barriers to Weight Management
8. Problem Solving
9. Weight Management for Life

Transition Phase (Months 4-6)

1. Stress Management
2. Time Management
3. Relapse Prevention

Maintenance Phase (Months 7-24)

1. Taking the Exercise Challenge
2. Snacking Sense
3. Planning for Holidays
4. Creating Social Support for Weight Management
5. Restarting Your Weight Management Program
6. Staying Motivated with Exercise
7. Mindful Eating
8. Challenging Negative Thoughts
9. Stopping Emotional Eating
10. Weight Management during Vacations
11. Eating Healthy on a Budget
12. Get on Track
13. What's for Breakfast
14. Quick Fixes: Healthy Meals in Minutes
15. Avoiding Holiday Weight Gain
16. What We Really Know about Weight Management
17. Healthy, Happy New Year
18. Guilt-free Desserts
19. Back to Exercise Basics
20. How's Your Body Image?
21. Planning for Special Occasions
22. Safe Summer Exercise

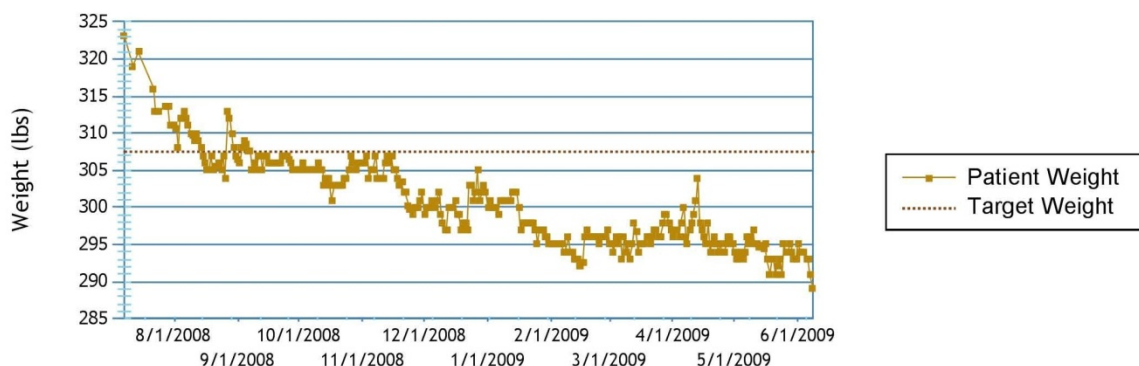
Sample PCP Weight Progress Report

POWER Hopkins Patient Weight Progress Report

Medical Record #: _____

Patient Weight - 7/8/2008 to 6/8/2009

Randomization Weight:



Comments to participant

Comments to patient:

Basic (HELP):

- * Help by acknowledging that losing weight is challenging.
- * Encourage keeping scheduled contacts with coach, logging in to record weight, exercise, food.
- * Let patient know program is based on scientifically verified (tried and true) principles.
- * Point out individual benefits of weight loss (e.g. BP, glucose control). Even a small weight loss will help your.

Additional (if time allows):

- * Comment on weight change (e.g. It's great that you have been losing weight, or It's great that you are sticking with the program).
- * Reinforce tracking: The more you track your behavior and log in the more likely you are to achieve weight loss success.

Notes to POWER Coach

Report reviewed with patient on: ____ / ____ / ____

Medical event or Rx change affecting ability to exercise: ☐ No event ☐ Yes

Describe briefly:

Personal event affecting ability to exercise: ☐ No event ☐ Yes

Describe briefly:

Time (minutes) spent on weight loss counseling: None 1 2 3 4 5 More (specify): ____

Comments covered: ☐ None ☐ Basic ☐ Additional

Other:

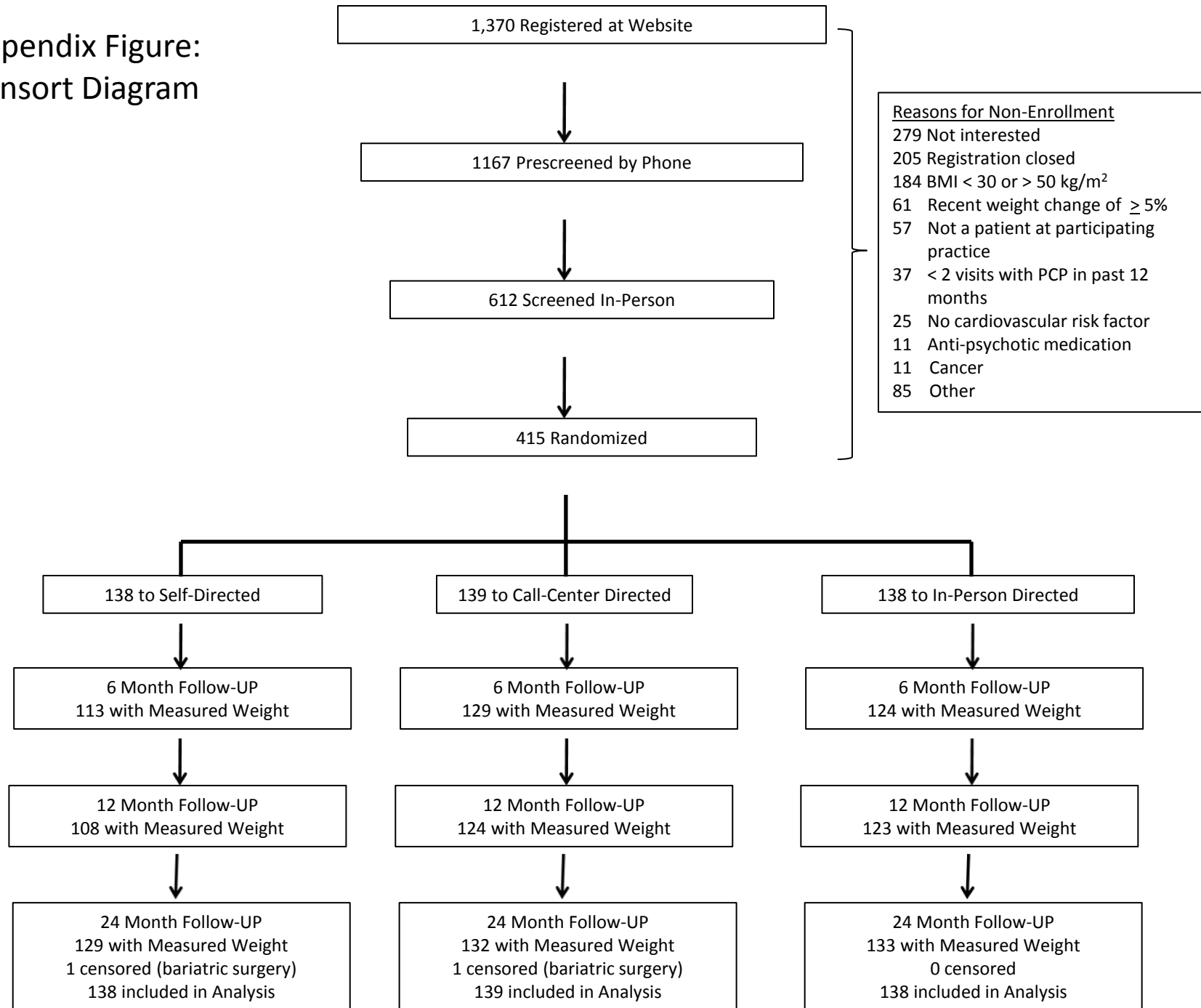
Appendix Figure: Consort Diagram

Enrollment: Patients

Allocation: Patients

Follow-Up: Patients

Analysis: Patients



Appendix Table 1: Model-based estimates of within-group change in weight, percent weight change, body mass index, and waist circumference, mean and standard error, at 6, 12, and 24 months*

Randomized Group						
Absolute weight change (kg)**	n	Self-Directed (SD)	n	Call-Center-Directed (CCD)	n	In-Person-Directed (IPD)
Baseline	138	104.2 (1.3)	139	102.5 (1.2)	138	104.9 (1.6)
6m change	113	-1.5 (0.4)	129	-6.0 (0.5)	124	-5.8 (0.6)
12m change	108	-1.1 (0.5)	124	-5.7 (0.7)	123	-5.4 (0.7)
24m change	129	-0.8 (0.7)	139	-4.5 (0.7)	133	-5.1 (0.8)
Percent Weight Change						
% change at 6m	113	-1.5 (0.4)	129	-6.2 (0.6)	124	-5.8 (0.6)
% change at 12m	108	-1.3 (0.5)	124	-6.0 (0.7)	123	-5.5 (0.7)
% change at 24m	129	-1.1 (0.6)	132	-4.9 (0.8)	13	-5.2 (0.7)
Body Mass index (BMI, kg/m²)						
Baseline	138	36.8 (0.4)	139	36.1 (0.4)	138	36.8 (1.4)
6m change	113	-0.5 (0.1)	129	-2.1 (0.2)	124	-2.0 (0.2)
12m change	108	-0.4 (0.2)	124	-1.9 (0.2)	123	-1.8 (0.2)
24m change	129	-0.4 (0.2)	139	-1.7 (0.3)	133	-1.7 (0.3)
Waist Circumference (cm)						
Baseline	138	118.5 (1.1)	139	117.8 (1.1)	138	118.3 (1.2)
6m change	110	-2.8 (0.4)	127	-6.4 (0.6)	120	-5.4 (0.6)
24m change	107	-3.4 (0.7)	119	-6.7 (0.9)	119	-6.3 (0.8)

*Adjusted for sex, age, race and clinic

**Data corresponds to Figure 2

Appendix Table 2: Model-based estimates of between-group differences in weight, percent weight change, body mass index, and waist circumference, mean (95% CI) at 6, 12, and 24 months*

		Between Group Difference at:					
		6 Months		12 Months		24 Months	
Absolute weight change (kg)**		mean (95%CI)	p-value	mean (95% CI)	p-value	mean (95% CI)	p-value
CCD vs SFD***		-4.5 (-5.8,-3.2)	<0.001	-4.5 (-6.1, -2.9)	<0.001	-3.8 (-5.6, -1.9)	<0.001
IPD vs SFD		-4.3 (-5.8,-2.9)	<0.001	-4.3 (-5.9, -2.6)	<0.001	-4.3 (-6.3, -2.3)	<0.001
IPD vs CCD		0.2 (-1.4, 1.8)	0.81	0.3 (-1.6, 2.2)	0.79	-0.6 (-2.6, 1.5)	0.58
Percent weight change							
CCD vs SFD		-4.7 (-6.0, -3.4)	<0.001	-4.7 (-6.4, -3.0)	<0.001	-3.9 (-5.8, -1.9)	<0.001
IPD vs SFD		-4.3 (-5.7, -2.9)	<0.001	-4.2 (-5.8, -2.5)	<0.001	-4.2 (-6.1, -2.3)	<0.001
IPD vs CCD		0.4 (-1.2, 2.0)	0.63	0.5 (-1.4, 2.4)	0.60	-0.3 (-2.4, 1.8)	0.77
Absolute BMI Change(BMI, kg/m²)							
CCD vs SFD		-1.6 (-2.0, -1.1)	<0.001	-1.5 (-2.1, -0.9)	<0.001	-1.3 (-2.0, -0.6)	<0.001
IPD vs SFD		-1.4 (-2.0, -0.9)	<0.001	-1.4 (-1.9, -0.8)	<0.001	-1.3 (-2.1, -0.6)	<0.001
IPD vs CCD		0.1 (-0.5, 0.7)	0.69	0.1 (-0.5, 0.8)	0.68	-0.1 (-0.8, 0.7)	0.88
Waist Circumference (cm)							
CCD vs SFD		-3.5 (-5.0, -2.0)	<0.001			-3.3 (-5.4, -1.2)	0.003
IPD vs SFD		-2.6 (-4.0, -1.2)	<0.001			-2.8 (-4.8, -0.9)	0.005
IPD vs CCD		1.0 (-0.7, 2.6)	0.26			0.5 (-1.8, 2.7)	0.69

*Adjusted for sex, age, race and clinic

**Data corresponds to Figure 2

***Change in CCD minus change in SD, change in ICD minus change in SD, change in IPD minus change in CCD

Appendix Table 3: Model-based estimates of within-group change in cardiovascular risk factors, mean and standard error, at 6, 12, and 24 months*

Randomized Group						
	Self-Directed (SFD)		Call-Center Directed (CCD)		In-Person Directed (IPD)	
Systolic BP (mmHg)	n		n		n	
Baseline	137	120.2 (1.0)	139	119.2 (1.2)	137	118.3 (1.1)
6m change	110	2.1 (1.1)	129	-1.3 (1.3)	123	0.7 (1.2)
24m change	114	3.6 (1.4)	122	1.6 (1.2)	126	2.6 (1.1)
Diastolic BP (mmHg)						
Baseline	137	73.3 (0.8)	139	72.5 (0.8)	137	71.7 (0.8)
6m change	110	1.4 (0.7)	129	-0.6 (0.8)	123	0.6 (0.8)
24m change	114	2.1 (0.9)	122	1.6 (0.9)	126	1.8 (0.8)
Total Cholesterol (mg/dL)						
Baseline	136	187.3 (3.1)	139	187.1 (3.1)	137	181.7 (3.0)
6m change	100	-4.1 (2.4)	121	-6.0 (2.4)	117	-6.4 (2.1)
24m change	93	-5.4 (2.5)	110	-4.6 (3.4)	105	2.3 (2.8)
LDL Cholesterol (mg/dL)						
Baseline	136	109.5 (2.8)	139	107.4 (2.6)	137	106.0 (2.7)
6m change	100	-4.7 (2.1)	120	-3.2 (2.1)	117	-4.9 (1.7)
24m change	93	-5.4 (2.3)	110	-4.5 (3.0)	105	0.3 (2.5)

*Adjusted for sex, age, race and clinic

Appendix Table 3 (continued): Model-based estimates of within-group change in cardiovascular risk factors, mean and standard error, at 6, 12, and 24 months*

Randomized Group						
	Self-Directed (SFD)		Call-Center Directed (CCD)		In-Person Directed (IPD)	
	n		N		n	
HDL Cholesterol (mg/dL)						
Baseline	136	50.5 (1.0)	139	53.5 (1.1)	137	51.2 (1.2)
6m change	100	-0.3 (0.5)	121	1.0 (0.6)	117	0.4 (0.6)
24m change	93	1.8 (0.7)	110	2.2 (0.8)	105	3.5 (0.8)
Triglycerides (mg/dL)						
Baseline	136	136.6 (5.2)	139	131.0 (5.1)	137	122.6 (3.8)
6m change	100	3.3 (5.4)	121	-17.5 (4.5)	117	-9.1 (4.0)
24m change	93	-7.1 (4.9)	110	-11.0 (4.9)	105	-4.1 (6.4)
Glucose (mg/dL)						
Baseline	136	107.1 (2.6)	139	104.8 (2.0)	137	103.9 (1.8)
6m change	100	-3.4 (1.6)	121	-2.5 (1.9)	117	-4.3 (1.4)
24m change	93	-3.8 (2.3)	110	-5.7 (1.7)	105	-2.6 (1.5)

Appendix Table 4: Model-based estimates of between-group differences in cardiovascular risk factors, mean (95% CI) at 6 and 24 months*

	6 Months		24 Months	
	Estimate (CI)	P-value	Estimate (CI)	P-value
Systolic BP (mmHg)				
CCD vs SFD**	-3.4 (-6.8, -0.00)	0.048	-2.0 (-5.6, 1.6)	0.28
IPD vs SFD	-1.4 (-4.6, 1.8)	0.39	-1.1 (-4.6, 2.5)	0.55
IPD vs CCD	2.0 (-1.4, 5.6)	0.25	0.9 (-2.3, 4.2)	0.58
Diastolic BP (mmHg)				
CCD vs SFD	-2.0 (-4.1, 0.2)	0.069	-0.6 (-2.9, 1.8)	0.65
IPD vs SFD	-0.8 (-2.9, 1.3)	0.44	-0.4 (-2.6, 1.9)	0.75
IPD vs CCD	1.2 (-1.0, 3.4)	0.29	0.2 (-2.1, 2.5)	0.86
Total Cholesterol (mg/dL)				
CCD vs SFD	-1.9 (-8.5, 4.8)	0.58	0.8 (-7.5, 9.1)	0.85
IPD vs SFD	-2.3 (-8.5, 3.8)	0.46	7.8 (0.4, 15.2)	0.039
IPD vs CCD	-0.5 (-6.7, 5.8)	0.89	7.0 (-1.7, 15.6)	0.11
LDL Cholesterol (mg/dL)				
CCD vs SFD	1.5 (-4.4, 7.4)	0.62	0.9 (-6.6, 8.3)	0.82
IPD vs SFD	-0.2 (-5.5, 5.1)	0.93	5.7 (-1.0, 12.4)	0.097
IPD vs CCD	-1.7 (-7.0, 3.5)	0.52	4.8 (-2.9, 12.5)	0.22

*Adjusted for sex, age, race and clinic

**Change in CCD minus change in SD, change in ICD minus change in SD, change in IPD minus change in CCD

Appendix Table 4 (continued): Model-based estimates of between-group differences in cardiovascular risk factors, mean (95% CI) at 6 and 24 months*

	6 Months		24 Months	
	Estimate (CI)	P-value	Estimate (CI)	P-value
HDL Cholesterol (mg/dL)				
CCD vs SFD	1.3 (-0.1, 2.8)	0.07	0.3 (-1.7, 2.3)	0.74
IPD vs SFD	0.7 (-0.8, 2.2)	0.35	1.7 (-0.4, 3.7)	0.11
IPD vs CCD	-0.6 (-2.2, 1.0)	0.44	1.3 (-0.8, 3.5)	0.22
Triglycerides (mg/dL)				
CCD vs SFD	-20.9 (-34.7, -7.0)	0.003	-3.9 (-17.5, 9.7)	0.57
IPD vs SFD	-12.4 (-25.7, 0.8)	0.066	3.0 (-12.8, 18.8)	0.71
IPD vs CCD	8.4 (-3.3, 20.2)	0.16	6.9 (-9.0, 22.8)	0.39
Glucose (mg/dL)				
CCD vs SFD	0.9 (-3.9, 5.7)	0.71	-1.8 (-7.5, 3.8)	0.52
IPD vs SFD	-0.9 (-5.1, 3.2)	0.66	1.2 (-4.2, 6.6)	0.66
IPD vs CCD	-1.8 (-6.5, 2.8)	0.44	3.0 (-1.4, 7.5)	0.18

*Adjusted for sex, age, race and clinic

**Change in CCD minus change in SD, change in ICD minus change in SD, change in IPD minus change in CCD

Appendix III: Acknowledgements

We are enormously appreciative of the POWER participants who made this study possible. In addition, we thank the staff and management of Healthways, Inc., and the following individuals who made substantial contributions to the study but who are not authors:

From Johns Hopkins: Kelly Mantegna, Reza Alavi, M.D., MBA, Wendy L. Bennett, M.D., MPH, Katie Dietz, Colleen Schreyer, Bernellyn Carey, Maria Metcalf Lewis, Noni Robinson, Susanne Ball, Megan Gauvey-Kern, Valerie Sneed, Tia Harris, Lorraine Smith, Adriana Matos, Elisha Rhodes.

From NHLBI: Barbara Wells, PhD, MA, RDH (Project Officer), Catherine Loria, PhD, MS, MA, Lawrence Fine, MD, DrPH, MPH. From the Data and Safety Monitoring Board: David C. Goff, MD, PhD, (Chair; Wake Forest University), Robert Kushner, MD (Northwestern University), Gbenga Ogedegbe, MD (New York University), Amelie G. Ramirez, DrPH, MPH (University of Texas at San Antonio), Nathan Stinson, MD, PhD, MPH (National Center on Minority Health and Health Disparities, NIH), and Barbara Tilley, PhD (University of Texas at Houston).

From Centennial Medical Center, Elkridge, MD: Kathleen York-Jordon, M.D., Sabrina Barsky CRNP, Walther Chi, M.D., Rajiv Dua, M.D., Steven Geller, M.D., Joseph Gibbons, M.D., Richard Kolodrubetz, M.D., Sonja Wells CRNP.

From Johns Hopkins Community Physicians at Canton: Robert Connors, M.D., Sherin Varghese.

From Johns Hopkins Community Physicians at Columbia: Susan Brown , M.D., Kisa Crosse, M.D., Manish Kohli, M.D., MPH, MBA, Kanthi Wicks, M.D., Christine Marino, M.D.

From Johns Hopkins Community Physicians at Laurel: Jenel Wyatt, M.D., Rania Rosborough, M.D., Linda McGee, M.D.

From Johns Hopkins Community Physicians at Wyman Park: Jayant Anjaria, M.D., Melva Brown, M.D., David Eisenberg, M.D., Amy Freedman, M.D., Sandra Hairston, M.D., Ta-Ya Lee, CRNP, Maura McGuire, M.D., Gary Noronha, M.D., Kashiben Patel, M.D., Robert Shochet, M.D.

From Park Medical Associates: Charles Angell, M.D., John Aucott, M.D., Petert Belitsos, M.D., Kenneth Glick, M.D., Tammy Hadley, M.D., Timothy Krohe, M.D., Jeffrey Magaziner, M.D., Susan Molinaro, M.D., Mary Newman, M.D., Thomas Pozefsky, M.D., Patricia Savadel, M.D., Eric Seifter, Lisa Simonson, M.D.